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The FreedomView LED Fiberscope from Optim Inc. provides fast and accurate remote imaging, enabling visual inspections in hard-to-reach places. Source: Optim Inc.

Optimal Freedom

The FreedomView LED Fiberscope can be used in many hard-to-reach places. BY MICHELLE BANGERT, SPECIAL PROJECTS EDITOR

Getting a good look at something—whether it is the inside of a car door or a jet engine—makes it easier to evaluate the product.

A new tool allows operators to do just that. The FreedomView LED Fiberscope from Optim Inc. (Sturbridge, MA) provides fast and accurate remote imaging, enabling visual inspections in hard-to-reach places, including car engines, gas tanks, jet engines, piping and storage compartments such as cargo holds.

It is a handheld, portable inspection device that combines a patented high-intensity LED light source with a flexible insertion shaft that can be

fully immersed in water, gasoline and diesel fuel.

Joan Serio, sales manager of industrial products at Optim, says that several features set the product apart from others on the market, including the LED light, the patented “D”-shaped handle, bright clear imaging and its portability. The small 1.5-pound scope travels well and can be stored underneath an airline seat.

“The beauty of it is that it’s portable,” Serio says. “What makes us unique is that it’s easy to use, provides one of the brightest lights at 5,500 Kelvin color temperature—and you can walk around with it unteth-

ered. There’s no plug and no light guide cable.”

Although there are other scopes out there, the unique-

ness of the product has attracted attention in many vertical markets, including automotive, nondestructive testing, aviation, power generation, homeland security and law enforcement. It can be put down in the middle of a car door to see what is in the doorframe, submerged in diesel fuel to inspect a tank, or used to check a racecar for internal engine damage or metal debris. Recently, scopes have been sold to NASCAR Sprint Cup teams for use in racecar inspections.

Aerospace applications garnered the product some attention, and the fiberscope has been named the “2007 Readers’ Choice Product of the Year” by Photonics Tech Briefs (PTB), which is selectively bound into NASA Tech Briefs. PTB readers named it the “most significant new product introduced to the engineering community.”

One notable feature of the scope is the high intensity of its light output. At a customer site, for example, the scope illuminated the insides of a 747 jet engine. With such a large component, the middle is pitch black, but the scope allowed the customer to clearly see inside.

Being able to look inside where the human eye cannot is an invaluable tool for many applications and being able to do it quickly saves time and money.

The fiberscope comes in two diameters: 4 and 6 millimeter, and four lengths: 20, 40, 60 and 80 inch. It also has an aluminum handle fully integrated with the LED light source and all controls. A high-intensity LED light

SPECIFICATIONS

MECHANICAL	FV4MM	FV6MM
Outer Diameter	4 mm	6 mm
Lengths	51 cm	120 cm
	102 cm	157 cm 203 cm
Outer Shaft	Tungsten	Tungsten
Articulation	2-way	2-way

OPTICAL	FV4MM	FV6MM
Illumination	Li Ion Battery	Li Ion Battery
Depth of Field	6 to 100 mm	10 to 100 mm
Field of View	45 degrees	60 degrees



This handheld, portable inspection device combines a patented high-intensity LED light source with a flexible insertion shaft that can be fully immersed in water, gasoline and diesel fuel. *Source: Optim Inc.*

source is integrated into the handle. With no bulb replacements necessary, and no light guide cable to replace, costs are reduced.

Both versions are powered by a lithium ion rechargeable battery and include a Tungsten braid construction insertion shaft that is fully immersible in water, gasoline and diesel fuel. Both scopes have two-way tip articulation and the 6-millimeter is available with a 90-degree interchangeable tip option.

It is video/digital camera compatible, and comes with a 1-year warranty on the scope and a 3-year warranty on the LED light source.

The kit includes the fiberscope, two lithium ion batteries, a battery charger, operator's manual and carrying case. Optional accessories include a 110-volt adapter, vehicle power adapter, protective guide tube, side viewing adapter and video/digital camera couplers.

TECHNOLOGY CONTACT

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